REMARKS

Claims 1-5, 7, 8 and 10-13 remain pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

DRAWINGS

The drawings stand objected to for certain informalities. Applicant attaches revised drawings for the Examiner's approval. In the "Replacement Sheets" reference numbers 12B and 52 are added to Figure 1, reference number 26 is added to Figure 3, and reference number a3 is deleted from Figure 4.

As described in greater detail below, the specification is amended to address the Examiner's concern regarding reference number b3 on Page 12, line 9.

SPECIFICATION

Applicant amends the specification to address the Examiner's concern regarding reference number b3 on Page 12, line 9. In particular, Applicant replaces reference number b3 with reference number b2. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 2, 3, 4, 6, 7, 8, 9, 10, 12 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Suzuki et al. (U.S. Pat. No. 6,431,674 B2). This rejection is respectfully traversed.

Applicant amends independent claims 1 and 8 to include the features of original claims 6 and 9. Claims 6 and 9 are cancelled.

In the method of driving a film forming apparatus according to amended claim 1, and the film forming apparatus according to amended claim 8, a second signal is employed that does not cause liquid drops to be discharged and that imparts a shear rate to the liquid that lowers a viscosity of the liquid, wherein the liquid is a non-newtonian, pseudoplastic fluid body.

According to the claimed invention, because vibrations are imparted to the liquid by the second signal such that the liquid is not discharged as liquid drops, even if the liquid has a high viscosity or is not heatable, the liquid can be stably discharged. Critically, the liquid is a non-newtonian, pseudoplastic fluid body. The shear rate of a non-newtonian pseudoplastic fluid body is increased if vibrations are imparted thereto, resulting in the viscosity thereof being lowered, and even the viscosity of a fluid body that has a high degree of viscosity can be lowered without that fluid body being heated, thereby enabling the flowability of the fluid body to be improved.

The Office Action alleges that Suzuki et al. discloses a method of driving a film forming apparatus that discharges liquid drops by imparting vibrations to a liquid; controlling the vibrations by a first signal that causes liquid drops to be discharged; and controlling the vibrations by a second signal that does not cause liquid drops to be discharged, and that imparts a shear rate to the liquid that lowers a viscosity of the liquid.

However, according to Column 16, line 20 of Suzuki, the viscosity of the ink used by the ink-jet recording apparatus depends largely on temperature. Accordingly,

when a low voltage signal is applied to the piezoelectric transducer 23 to minutely vibrate a meniscus associated therewith, the amplitude of a minute vibration is greatly influenced by temperature. The second drive signal is kept at a constant voltage value (V2), while a rising gradient and a falling gradient are adjusted in accordance with the ambient temperature. Specifically, for room temperature (25° C), the rising gradient α is set at 4V/μs, and the falling gradient β is set at 6.7 V/μs. For low temperatures, such as 5° C, the rising gradient $\alpha 1$ is set at 5V/μs, and the falling gradient $\beta 1$ is 8.4 V/μs. For higher temperatures, the rising gradient $\alpha 2$ is set at 3V/μs, and the falling gradient $\beta 2$ is 5 V/μs.

Thus, Suzuki discloses adjusting a rising gradient and a falling gradient in accordance with the ambient temperature, so as to control the viscosity of the ink used by the ink-jet recording apparatus. This is significantly different than the Applicant's claimed invention.

Accordingly, amended claims 1 and 8 are not anticipated by Suzuki et al., and claims 1 and 8 should be allowed. Likewise, claims 2, 3, 4, 7, 10, 12 and 13 depending therefrom should also be allowed.

REJECTION UNDER 35 U.S.C. § 103

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Suzuki et al. (U.S. Pat. No. 6,431,674 B2) in view of Imanaka et al. (U.S. Pat. No. 6,409,300 B2). This rejection is respectfully traversed.

As stated above, Suzuki et al. does not anticipate the subject matter of amended claim 8. Claim 11 depends from claim 8. Applicant submits that claim 11 should be allowed for at least the same reasons as set forth above regarding claim 8.

ALLOWABLE SUBJECT MATTER

The Examiner states that claim 5 would be allowable if rewritten in independent form. Applicant defers rewriting claim 5 in independent form until after the Examiner considers the above amendments and remarks. A continuing indication of the allowability of claim 5 is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: September 13, 2005

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[GGS/BEW/jmz]

AMENDMENTS TO THE DRAWINGS

The attached "Replacement Sheets" of drawings include changes to Figures 1, 3 and 4. The attached "Replacement Sheets," which include Figures 1, 3 and 4, replace the original sheets including Figures 1, 3 and 4.

Attachment: Replacement Sheets